AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) Polymer mixture comprising a polymer which is transparent at a wavelength greater than 300 nm and poly(9,9-XY-fluorene), wherein X and Y are each separately a straight or branched saturated or unsaturated C_1-C_{12} hydrocarbon chain and the said poly(9,9-XY-fluorene) is substantially dispersed as isolated chains, having an isolated chain density within the said transparent polymer of not more than 1×10^{19} cm^{-3}.

2. (original) Mixture according to Claim 1, wherein the said density of isolated chains in the said transparent polymer lies within the range from about 1×10^{17} to about 8×10^{18} cm^{-3}.

3. (original) Mixture according to Claim 2, wherein the said density of isolated chains in the said transparent polymer is about 5×10^{18} cm^{-3}.

4. (currently amended) Mixture according to ~~Claims 1-3~~ Claim 1, wherein X and Y are independently of each other a straight saturated $C_1 - C_{12}$ chain.

5. (original) Mixture according to Claim 4, wherein X and Y are independently of each other a straight saturated $C_6 - C_9$ chain.

6. (original) Mixture according to Claim 5, wherein X and Y are two identical alkyl chains.

7. (original) Mixture according to Claim 6, wherein X and Y are identical, and are octyl chains.

8. (currently amended) Mixture according to ~~any of the preceding claims~~ Claim 1, wherein the said transparent polymer transmits light within a range from 300 nm to 900 nm.

9. (original) Mixture according to Claim 8, wherein the transmission range of the transparent polymer is from 320 to 750 nm.

10. Mixture according to ~~any of claims from 1 to 7~~ Claim 1, wherein the transparent polymer is selected from the group comprising polymethylmethacrylate, polystyrene, polycarbonate.

11. (original) Mixture according to Claim 10, wherein the transparent polymer is polymethylmethacrylate.

12. (original) Process for the preparation of a mixture according to Claim 1, comprising

the steps of:

a) mixing a polymer which is transparent at a wavelength of at least 300 nm, poly(9,9-XY-fluorene) and an inert solvent, and

b) removing the solvent,

where X and Y are independently of each other a straight or branched saturated or unsaturated $C_1 - C_{12}$ hydrocarbon chain.

13. (original) Process according to Claim 12, wherein step a) takes place at room temperature and pressure.

14. (original) Process according to Claim 12, wherein the step of mixing between the said transparent polymer and the said poly(9,9-XY-fluorene) takes place in a ratio of 10 to 1.

15. (original) Optically active solid material of the polymer mixture according to Claim 1.

16. (original) Material according to Claim 15, in which the material is a polymer film.

17. (original) Material according to Claim 15, in which the gain band is from 450 to 610 nm with a maximum gain of 2500 db/cm.

18. (original) Use of the material according to Claim 15, as an optical switch.

19. (original) Use according to Claim 18, in which the material provides switching of the gain of 100 nm and a frequency of 300 GHz.